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Knowledge, Awareness, and Intercultural Communication Effectiveness Among US and Egyptian Student Physical Therapists Following an Educational Intervention

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BACKGROUND

- **Cross-Cultural Communication Effectiveness** is the ability to work with people from different cultural backgrounds.
- International communication promotes open perspectives, self-reflection, and cultural competence.¹
- Cross-cultural learning promotes practical perspectives and fosters self-reflection regarding cultural differences.¹
- Due to an increase in international collaboration, cross-cultural competence among student physical therapists is an important strategy to prepare healthcare workers to provide excellent care in diverse contexts.

PURPOSE

The purpose of this study was to investigate the impact of direct cross-cultural interaction on cultural competence between US and Egyptian physical therapy students.

METHODS

- **Design:** Quasi-experimental pre/post repeated measures study
- **Dependent Variables:**
 - **Perceived Awareness** (pre/post session - English & Arabic)
 - Measured by survey questions written by investigators and session presenters; objectives driven; piloted
 - **Knowledge** (pre/post session - English & Arabic)
 - Measured by survey questions written by investigator with item writing experience; confirmed by content experts; piloted and analyzed with difficulty indices
 - **Intercultural Communication Effectiveness** (pre/post 4-session series)
 - Using Intercultural Communication Effectiveness Scale (IES); validated scale for measuring intercultural effectiveness using a 5-point Likert scale.²
- **Independent Variables:** (1) Educational presentations; (2) Breakout group discussions
- **Participants:** Volunteer student physical therapists (SPTs) from US and Egyptian PT programs (Table 1)

Table 1. SPT Participation

X	Pre & Post Series Survey	Session 1 Participation	Pre & Post Session Survey Completion (n)		
			Session 2	Session 3	Session 4
Egyptian SPTs	19	31	21	23	20
US SPTs	6		7	7	7

- **Procedures:**
 - SPTs were sent an email explaining risks, benefits, and requirements of study.
 - Participating SPTs filled out consent forms and a Pre-Series Survey (IES)
 - Participating SPTs attended 4 sessions
 - Completed pre/post perceived awareness & knowledge surveys for Sessions 2, 3, 4 (Figure 1)



Figure 1. Timeline of Events

- Zoom Session Format (~60 minutes)
 - Greeting
 - Pre-Session Survey (5 minutes)
 - Educational Video (~15min)
 - Intercultural Group Breakout Session (~20min)
 - Large group debrief
 - Post-Session Survey

- **Data Analysis:** Nonparametric sign tests to account for group discrepancies between groups (SPSS Version 27)

RESULTS

Intercultural Communication Effectiveness

- 5 of 6 IES domains significantly improved following the cross-cultural education series (Table 2)

Awareness

- Pre-session cross-cultural comparison: SPTs arrived with less awareness of cross-culture (Table 3, blue)
- The educational session improved awareness for both same (purple) and cross (red) cultures (Table 3)

Knowledge

- Pre-session knowledge was similar for same and cross-culture, except knowledge of health systems (knowledge of same-culture content was significantly better; Table 4, blue)
- Same-culture knowledge did not significantly improve (purple); cross-culture (red) knowledge improved for entry level education and health systems topics (Table 4)

Table 2. Pre-Post Series Intercultural Effectiveness Change

IES Domains	Behavioral Flex	Interaction Relaxation	Interactant Respect	Message Skills	Identity Maintenance	Interaction Management
Pre-series (Md)	3.25	3.80	4.67	3.67	3.67	4.00
Post-series (Md)	3.50	4.20	4.67	4.00	4.00	4.00
P-value	.017*	.001**	.064	.031*	.000**	.008**

Note. *P < .05; **P ≤ .001

Table 3. Changes in Perceived Awareness Ratings

Entry Level Education Session (Md) 10 Statements (5 Egypt; 5 USA)				Licensing and Advanced Practice (Md) 6 Statements (3 Egypt; 3 USA)				Health Systems Session (Md) 10 Statements (5 Egypt; 5 USA)			
Pre-Session		Post-Session		Pre-Session		Post-Session		Pre-Session		Post-Session	
Same	Cross	Same	Cross	Same	Cross	Same	Cross	Same	Cross	Same	Cross
3.50	1.08	4.17	3.50	3.67	1.33	4.33	3.67	3.20	1.20	4.20	3.60
P < .001**		P < .001**		P < .001**		P < .001**		P < .001**		P < .001**	

Note. Scale: 1=Not at all aware, 2=Slightly aware, 3=Somewhat Aware, 4=Aware, 5=Very aware; Same = Respondents answer questions about their own culture; Cross = Respondents answer questions about another culture

Table 4. Comparison of Percent Knowledge Questions Answered Correctly -- Mean (SD)

Entry Level Education Session 6 Questions (3 Egypt; 3 USA)				Licensing and Advanced Practice 6 Questions (3 Egypt; 3 USA)				Health Systems Session 4 Questions (2 Egypt; 2 USA)			
Pre-Session		Post-Session		Pre-Session		Post-Session		Pre-Session		Post-Session	
Same	Cross	Same	Cross	Same	Cross	Same	Cross	Same	Cross	Same	Cross
73.21 (34.65)	64.29 (32.93)	89.20 (20.89)	83.93 (23.78)	35.56 (17.36)	34.44 (18.54)	45.56 (29.67)	40.00 (23.81)	68.52 (37.08)	31.48 (31.46)	70.37 (28.62)	61.11 (32.03)
P = .092		P = .022*		P = .118		P = .332		P = 1.000		P ≤ .001**	
P = .332		P = 1.000		P = .332		P = .332		P = .332		P = .332	

Note. Same = Respondents answer questions about their own culture; Cross = Respondents answer questions about another culture

CONCLUSIONS & IMPLICATIONS

- Physical therapy students from both cultures demonstrated improved their cultural awareness and reported feeling more comfortable interacting with their cultural counterparts.
- Cross-cultural topics knowledge improved but same-culture knowledge, which was already high, did not.

References

1. Wang CM. Instructional design for cross-cultural online collaboration: Grouping strategies and assignment design. *Australas J Educ Technol.* 2011;27(2):243-258. doi:10.14742/ajet.968
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